



Family Center  
for Allergy  
and Asthma

# Beyond Antihistamines: The Power of Allergen Immunotherapy

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**60 million** people in the U.S. are  
affected by Allergic Rhinitis





# What is Allergen Immunotherapy (AIT)?

## Definition:

Allergen immunotherapy (AIT), commonly known as **allergy shots**, is a **disease-modifying treatment** that involves the **subcutaneous administration of gradually increasing amounts of specific allergens** to reduce sensitivity over time.

## Indications:

- Allergic rhinitis and/or allergic conjunctivitis (seasonal/perennial)
- Allergic asthma (seasonal/perennial)
- Atopic patients with poor symptom control despite pharmacotherapy

## Mechanism of Action:

- Induces immune tolerance via **regulatory T-cell** activation
- Decreases Immunoglobulin E (**IgE**) response and shifts toward **IgG4** production
- Reduces **mast cell** and **basophil** reactivity over time





# Clinical efficacy and benefits

## Evidence-Based Outcomes:

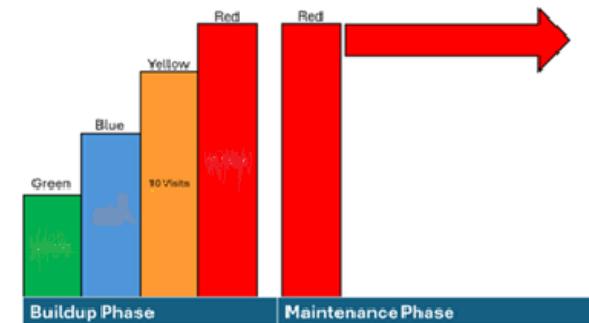
- Symptom reduction: ~70–90% efficacy in properly selected patients
- Reduced medication use (e.g., antihistamines, nasal corticosteroids)
- Prevention of new allergen sensitizations
- May reduce risk of developing asthma in pediatric patients with allergic rhinitis

## Duration & Response Timeline:

- Initial build-up phase: 3–6 months
- Maintenance phase: 3–5 years
- Clinical improvement often seen within **6–12 months**

## Long-Term Benefits:

- **Sustained symptom relief** after therapy completion
- **Modifies disease progression**, unlike pharmacologic therapy





# Safety, referral, and collaboration

## Safety Profile:

- Generally well tolerated under allergist supervision
- Local reactions common (e.g., redness, swelling at injection site)
- Systemic reactions rare: <0.1% of injections
  - Managed with prompt epinephrine administration
  - Emergency protocols in place

## Ideal Referral Candidates:

- Patients with poor response to standard therapies
- Preference to avoid long-term medications
- Quality-of-life impact (school/work absenteeism, sleep disruption)

## Collaborative Role for Referring Physicians:

- Recognize candidates early
- Coordinate care plans with allergist
- Monitor comorbid conditions (e.g., asthma control)

**Summary:** AIT is a safe, effective, and underutilized tool for long-term management of allergic diseases.





# Clinical practice guidelines and position papers

- **Allergen Immunotherapy: A Practice Parameter Third Update (2011)**  
*Joint Task Force on Practice Parameters (AAAAI, ACAAI, JCAAI)*
  - Reference: Cox L, Nelson H, Lockey R, et al. *J Allergy Clin Immunol.* 2011;127(1 Suppl):S1-S55.
  - DOI: 10.1016/j.jaci.2010.09.034
  - Summary: Comprehensive guideline outlining indications, safety, efficacy, and administration protocols.
- **2023 Focused Updates to the Practice Parameter for Allergen Immunotherapy**  
*AAAAI/ACAAI Joint Task Force*
  - Highlights updates in risk stratification, shared decision-making, and emerging evidence.
  - [Available via AAAI or ACAAI websites]
- **Canonica GW, et al. "Subcutaneous immunotherapy (SCIT): current practice and future developments."**  
*Allergy.* 2014;69(8): 998–1004.
  - DOI: 10.1111/all.12401
  - Summary: Reviews mechanisms, safety, and efficacy of SCIT with focus on long-term disease modification.
- **Durham SR, et al. "Allergen immunotherapy: Therapeutic vaccines for allergic diseases."**  
*J Intern Med.* 2017;282(2): 144–157.
  - DOI: 10.1111/joim.12634
  - Summary: Describes immune mechanisms and benefits of AIT, including prevention of disease progression.
- **Brożek JL, et al. "Allergen immunotherapy for the treatment of allergic rhinoconjunctivitis and/or asthma: a GRADE systematic review."**  
*J Allergy Clin Immunol.* 2013;131(2): 556–568.
  - DOI: 10.1016/j.jaci.2012.12.156
  - Summary: Meta-analysis showing high-level evidence for the efficacy of AIT.



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Thank you for your time and attention!

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